

REMARKS

The Office Action mailed on May 16, 2002, has been received and reviewed. Claims 1, 2, 8, and 12-31 are currently pending in the application. All the currently pending claims have been rejected. Reconsideration of the above-referenced application is respectfully requested.

Withdrawal of Rejection

Applicant thankfully acknowledges the indication in the Office Action that the rejection of claims 18, 21, and 26-29 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,882,496 to Northrup *et al.* has been withdrawn.

Rejection Under 35 U.S.C. § 102

Anticipation Rejection Based on U.S. Patent 5,571,410 to Swedberg *et al.*

Claims 1, 2, 8, and 12-31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,571,410 to Swedberg *et al.* (hereinafter "Swedberg"). Applicant respectfully traverses the rejection for the reasons set forth below.

Requirements for Anticipation

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). And the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990). *See generally* MPEP § 2131.

Porous Capillary Column Matrix

Independent claims 1 and 18 (and every other currently pending claim) each recite "a porous capillary column formed in a nonporous substrate, said porous capillary column

comprising a matrix including the same material as said nonporous substrate”. Applicant respectfully submits Swedberg neither expressly nor inherently describes “a porous capillary column comprising a matrix including the same material as the nonporous substrate”.

Swedberg teaches substrates including the following: polycarbonates; polyesters, including poly(ethylene terephthalate) and poly(butylene terephthalate); polyamides, (such as nylons); polyethers, including polyformaldehyde and poly(phenylene sulfide); polyimides, such as Kapton® and Upilex®; polyolefin compounds, including ABS polymers, Kel-F copolymers, poly(methyl methacrylate), poly(styrene-butadiene) copolymers, poly(tetrafluoroethylene), poly(ethylenevinyl acetate) copolymers, poly(N-vinylcarbazole) and polystyrene. *Swedberg*, col. 21, line 49 through col. 22, line 4. Swedberg also teaches substrates made from ceramics (including aluminum oxides and the like) and composite substrates such as laminates. *Swedberg*, col. 7, lines 56-64.

Some embodiments of Swedberg’s miniaturized columns are filled with a porous medium made of particles, sheets or membranes. *Swedberg*, col. 27, lines 33-35. The medium is biocompatible and may be made from such materials as nylon, cellulose, polymethylmethacrylate, polyacrylamide, agarose, or the like. *Swedberg*, col. 27, lines 37-40.

Swedberg thus teaches a wide variety of suitable substrates and, in some embodiments, column-filling porous media. In view of the fact that some of Swedberg’s column-filling media are the same as some of her substrates (*e.g.*, nylon and polymethylmethacrylate), the Office asserts that Swedberg in fact does teach a porous matrix formed in and from the same material as the nonporous substrate. *Office Action*, p. 5. Applicant respectfully disagrees.

Express Description – Swedberg’s Sole Example

Despite providing lists of materials of materials that may be used as the substrate and columns of the device described in Swedberg, Swedberg describes no miniaturized column device that expressly includes a porous capillary column comprising a matrix including the same material as the nonporous substrate in which the column is formed. The only express description

of Swedberg's device is provided in Example 1, in which the miniaturized column device substrate is fabricated from the polyimide material Kapton®. *Swedberg*, col. 33, lines 21-24. The exemplary miniaturized column device includes four sample treatment components (columns). The first sample treatment component (column) is loaded with a matrix of a membrane material containing protein A/G, which binds to Immunoglobulins G, A, and M. *Swedberg*, col. 33, lines 29-34 & 58-61. The second sample treatment component (column) contains an anti-convective media such as polyacrylamide, polymethylmethacrylate, or agarose. *Swedberg*, col. 34, lines 24-26. The third sample treatment component (column) contains a liquid ampholyte or an ampholyte in a gel matrix. *Swedberg*, col. 34, lines 37-39. And the fourth sample treatment component (column) contains no matrix, instead using capillary zone electrophoresis to effect the final separation function. *Swedberg*, col. 34, lines 56-61. None of the columns of Swedberg's exemplary miniaturized column device contain a matrix including the same material as the polyimide Kapton® substrate. Accordingly, Swedberg fails to expressly describe "a porous capillary column comprising a matrix including the same material as said nonporous substrate," as recited in independent claims 1 and 18 and claims 2, 8, 12-17, and 19-31 depending therefrom. Withdrawal of the rejection is hence respectfully solicited.

Inherency

Swedberg likewise fails to inherently describe "a porous capillary column comprising a matrix including the same material as said nonporous substrate". The Office contends that because some of Swedberg's assortment of suitable substrates and column-filling matrices are the same (*i.e.*, nylon and polymethylmethacrylate), Swedberg "discloses that the porous matrix is formed in and from the same material as the nonporous substrate." *Office Action*, p. 5.

However, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). As the Federal Circuit has articulated this principle more recently: "To establish inherency, the extrinsic evidence 'must make clear that the missing

descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted). Applying this doctrine to the present rejection, the mere fact that Swedberg’s array of suitable substrates and column-filling matrices *could* be combined in such a way as to produce “a porous capillary column comprising a matrix including the same material as said nonporous substrate” is insufficient to establish anticipation.

On the contrary, the Office must provide a basis in fact and/or technical reasoning to reasonably support the determination that “a porous capillary column comprising a matrix including the same material as said nonporous substrate” necessarily flows from Swedberg’s teachings. MPEP § 2112. The Office has provided no such rationale. Therefore, Applicant respectfully submits the Office has not established that Swedberg inherently teaches the subject claim limitation.

In view of the foregoing analysis, Applicant respectfully submits Swedberg fails to describe, either expressly or inherently, each and every limitation of independent claims 1 and 18 and claims 2, 8, 12-17, and 19-31 depending therefrom. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

Applicant respectfully submits that claims 1, 2, 8, and 12-31 are allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing the allowance of any of claims 1, 2, 8, or 12-31 remain that might be resolved expeditiously by way of a telephone interview, the Office is kindly invited to contact the undersigned attorney, whose direct-dial telephone number is (801) 994-8719.

Respectfully Submitted,



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